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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,612	02/12/2004	Donald J. Curry	118664	3946
27074	7590	04/09/2007		
OLIFF & BERRIDGE, PLC. P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER TYLER, NATHAN K	
			ART UNIT	PAPER NUMBER
			2609	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/09/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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## Office Action Summary

Application No.

10/776,612

Applicant(s)

CURRY ET AL.

Examiner

Nathan K. Tyler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/12/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 20041205
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: the attorney docket numbers used at page one, paragraph 1 to incorporate U.S. Patent Applications by reference should be replaced with their corresponding U.S. serial numbers. Any attorney docket numbers that are present elsewhere in the specification should also be replaced accordingly.

Appropriate correction is required.

### ***Claim Suggestions***

2. Regarding claim 8, line 7, replacing "control signal being is based on" with - -control signal is based on- - is suggested.

### ***Claim Objections - 37 CFR 1.75(a)***

3. The following is a quotation of 37 CFR 1.75(a):

The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

4. Claim 16, 18, and 19 are objected to under 37 CFR 1.75(a), as failing to particularly point out and distinctly claim the subject matter which application regards as his invention or discovery.

Regarding claim 16, the phrase "means producing" at lines 3 and 5 is unclear, due to the fact that lines 2 and 4 recite "means for producing." The use of "means producing" makes it unclear as to whether or not applicant intends to invoke 35 USC 112, sixth paragraph. As lines 2

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and 4 use explicit “means for” language, it will be assumed for examination purposes that applicant intended for every limitation of claim 16 to be treated under 35 USC 112, sixth paragraph. Replacing “means producing” with - - means for producing - - at lines 3 and 5 is suggested.

Regarding claim 18, it is unclear whether this claim is drawn to an apparatus or a method. “A xerographic marking device” is interpreted to be the preamble of the claim, stating intended use or purpose. “Using” is interpreted to be the transitional phrase. Therefore the body of the claim, “the method of claim 1,” recites no structure. Given that an apparatus must be defined by and distinguish itself from the prior art in terms of “structure” (i.e., “While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997)” – MPEP 2114), and in light of the fact that claim 18 does not appear to recite structure in the body of the claim, it is unclear whether an apparatus is being claimed at all.

A corresponding objection also applies to claim 19.

***Claim Objections - 37 CFR 1.75(d)(1)***

5. The following is a quotation of 37 CFR 1.75(d)(1):

The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

6. Claims 1 and 17 are objected to under 37 CFR 1.75(d)(1), as failing to conform to the invention as set forth in the remainder of the specification.

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Claim 1, line 4 recites “adding the frequency measurement signal to an image data signal to produce an output signal.” In accordance with the remainder of the specification, it is the multiplied frequency measurement signal, not the frequency measurement signal that is added to image data to produce an output signal. Therefore, the following will be assumed for examination purposes:

From

“adding the frequency measurement signal”,

To:

- - adding the multiplied frequency measurement signal - -

Claim 17 recites “a computer-readable medium or a carrier wave encoded to perform the method of claim 1.” There is no support for this limitation in the remainder of the specification. As claim 17 is an original claim, and therefore is self-supporting, the examiner suggests amending the specification to include the limitation of claim 17 without adding any new matter.

*Claim Rejections - 35 USC § 101*

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. The USPTO “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility” (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.

... a signal does not fall within one of the four statutory classes of Sec. 101.

... signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101.

9. Claim 17 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 17 defines a carrier wave encoded with descriptive material. While “functional descriptive material” may be claimed as a statutory product (i.e., a “manufacture”) when embodied on a tangible computer readable medium, a carrier wave embodying that same functional descriptive material is neither a process nor a product (i.e., a tangible “thing”) and therefore does not fall within one of the four statutory classes of § 101. Rather, a “carrier wave” is a form of energy, in the absence of any physical structure or tangible material.

Additionally, claim 17 recites “a computer-readable medium ~~or a carrier wave~~ encoded to perform the method of claim 1.” A computer-readable medium by itself is not capable of performing any method. The examiner suggests amending claim 17 as follows:

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From

“A computer-readable medium or a carrier wave encoded to perform the method of claim 1.”

To

- - A computer-readable medium encoded with instructions which, when executed by a computer, cause the method of claim 1 to occur. - -

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1, 2, 3, 6, 8, 9, 10, 13, 15, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Williams (US 6229923 B1).

Regarding **claims 1 and 8**, Williams discloses a method and corresponding apparatus for estimating a screen frequency from image data comprising: multiplying a frequency measurement signal by a factor (Fig. 9: “Screen” 881 is generated based on a frequency

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measurement from “Fuzzy Segmentor” 80. see “To implement the fuzzy screening...” at column 20, line 32. “Screen” is multiplied by factor “Screen Weight” 883 using multiplier 885); adding the - - multiplied - - frequency measurement signal to an image data signal to produce an output signal (Fig. 9: the output of multiplier 885 is added to “Video” by adder 89); and adjusting the factor multiplied to the frequency measurement signal based on a control signal, wherein the control signal is based on a characteristic of the image data (see Fig. 9, control signal is signal from “Fuzzy Segmentor” 80 to “Screen Weight” 883. “The screen weighting circuit 883 generates a weighting factor in response to the values in the membership vector...” at column 21, line 18).

Regarding **claims 2 and 9**, Williams discloses measuring a contrast within a window of the image data to produce the control signal (see column 15, line 60. The control signal is based on the “summation of the squares of the Laplacian of every pixel in the block”).

Regarding **claims 3 and 10**, Williams discloses filtering the image data using a low-pass filter to produce the image data signal (Fig. 7, “Video” is processed using “Low Pass Filter” 81).

Regarding **claims 6 and 13**, Williams discloses subtracting a frequency signal from the image data signal, to produce the frequency measurement signal (Fig. 23: output of “Programmable Delay Line” 602 is subtracted from the output of “Peak Detection” 600 by “Peak Detection” 604 in order to produce the frequency estimate signal).

Regarding **claim 15**, “means for” will be interpreted for examination purposes as being implemented using hardware or a hardware/software combination. Williams discloses means for combining a multiplied frequency measurement signal with an image data signal to produce an



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output signal (see grounds for rejection for claim 1); and means for adjusting a factor multiplied to the frequency measurement signal (see grounds for rejection for claim 1).

Regarding **claim 16**, “means for” will be interpreted for examination purposes as being implemented using hardware or a hardware/software combination. Williams discloses means for measuring contrast of the image data (see grounds for rejection for claim 2); means producing the image data signal (Fig. 2, numeral 10 “Data Buffer”); means for producing the screen frequency estimate (Fig. 9, numeral 80 “Fuzzy Segmentor” produces a “membership value” for each pixel in the image data. Possible membership values include “low frequency halftone” and “high frequency halftone.” See column 21, line 17); and means producing the frequency measurement signal (Fig. 9, numeral 881 “Screen” see grounds of rejection for claim 1).

Regarding **claim 17**, Williams discloses a computer-readable medium ~~or a carrier wave~~ encoded ~~to perform~~ - - with instructions which, when executed by a computer, cause - - the method of claim 1 - - to occur - - (“the image processing system of the present invention can be readily implemented on a general purpose computer, a personal computer or workstation” at column 38, line 41).

12. Claims 1, 4, 5, 8, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Eglit (US 6011538 A).

Regarding **claims 1 and 8**, Eglit discloses multiplying a frequency measurement signal by a factor; adding the - - multiplied - - frequency measurement signal to an image data signal to produce an output signal (see Fig. 6); and adjusting the factor multiplied to the frequency

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measurement signal based on a control signal, wherein the control signal is based on a characteristic of the image data (see Fig. 6, step 640. “the sampling frequency is chosen to be 1/2 the optimal sampling frequency” at column 6, line 44. I.e. in this example, the factor is multiplied by 1/2).

Regarding **claims 4 and 11**, Eglit discloses sub-sampling the image data to produce the image data signal (Fig. 6, step 640: “Sample the Analog Display Signal at Less Than the Optimal Frequency.” “As only 1/2 of the positions... would be sampled” at column 6, line 46).

Regarding **claims 5 and 12**, Eglit discloses interpolating the output signal to produce the screen frequency estimate (Fig. 6, step 650: “Upscale the Image Resulting From Step 340.” The output is an estimate of the frequency of the display screen).

13. Claims 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Merz et al. (US 6246776 B1).

Regarding **claims 18 and 19**, Merz discloses a xerographic marking device and a digital photocopier using the method of claim 1 (“FIGS. 1 and 2 show... The image recording media determination apparatus 10 is incorporated into a conventional image processing device 12 such as... a xerographic photocopier that performs an image processing function” at column 2, line 62. “Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32.” (--MPEP 2114) Therefore the xerographic marking device/digital photocopier taught by Merz is capable of performing the claimed function and so anticipates the claimed subject matter).

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 7 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Williams and Seidner (US 5333064 A):

Regarding **claims 7 and 14**, Williams does not disclose outputting the output signal, which is an estimate of the screen frequency, to a de-screening device.

Seidner teaches evaluating screen parameters including screen frequency, then outputting the screen parameters to a de-screening section (see Fig. 7).


It would have been obvious at the time the invention was made to one of ordinary skill in the art to output the screen frequency estimate taught by Williams to the de-screening system taught by Seidner, so that the screen frequency estimate could ultimately be used to remove the halftone screen, eliminating the possibility of a moire effect when the image is reproduced ("It is common to desire to reproduce the half-tone master on a reproduction system other than that used to produce it... Since the screen used for the second printing method is typically different from the original screen, a Moire effect will arise if the original screen is not removed. The process of removing the original screen before rescreening is known as descreening, or half-tone (HT) to continuous tone (CT) conversion, various elements of which are known in the art." At Seidner column 1, line 16).

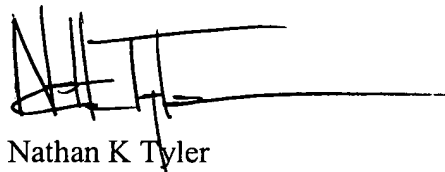
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan K. Tyler whose telephone number is 571-270-1584. The examiner can normally be reached on M-F 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on 571-272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
BRIAN WERNER  
SUPERVISORY PATENT EXAMINER

  
Nathan K Tyler  
Examiner  
Art Unit 2609